



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

**NOTICE OF ALLOWANCE AND ISSUE FEE DUE**

005514 MM91/0319  
FITZPATRICK CELLA HARPER & SCINTO  
30 ROCKEFELLER PLAZA  
NEW YORK NY 10112

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
09/401,660	09/23/99	01	CHANG, A 2872	03/19/01
First Named Applicant	NAKABAYASHI, 35 USC 134(b) term ext. = 0 Days.			

TITLE OF INVENTION: **DIFFRACTIVE OPTICAL ELEMENT AND METHOD OF MANUFACTURE OF THE SAME**

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
0 684.2902	359-576.000	D68	UTILITY	NO	\$1240.00	06/19/01

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.**

**THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.**

**HOW TO RESPOND TO THIS NOTICE:**

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the Patent and Trademark Office of the change in status, or
- B. If the status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

- A. Pay FEE DUE shown above, or
- B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

II. Part B-Issue Fee Transmittal should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B Issue Fee Transmittal should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "4b" of Part B-Issue Fee Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give application number and batch number. Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

PATENT AND TRADEMARK OFFICE COPY

**This Page Is Inserted by IFW Operations  
and is not a part of the Official Record**

## **BEST AVAILABLE IMAGES**

**Defective images within this document are accurate representations of the original documents submitted by the applicant.**

**Defects in the images may include (but are not limited to):**

- **BLACK BORDERS**
- **TEXT CUT OFF AT TOP, BOTTOM OR SIDES**
- **FADED TEXT**
- **ILLEGIBLE TEXT**
- **SKEWED/SLANTED IMAGES**
- **COLORED PHOTOS**
- **BLACK OR VERY BLACK AND WHITE DARK PHOTOS**
- **GRAY SCALE DOCUMENTS**

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.**



**UNITED STATES DEPARTMENT OF COMMERCE**  
**Pat nt and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/401,660 09/23/99 NAKABAYASHI

M 684.2902

005514 MM91/0319  
FITZPATRICK CELLA HARPER & SCINTO  
30 ROCKEFELLER PLAZA  
NEW YORK NY 10112

EXAMINER

CHANG, A

ART UNIT

PAPER NUMBER

2872

DATE MAILED:

03/19/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Notice of Allowability

Application No.

09/401,660

Examiner

Audrey Y. Chang

Applicant(s)

NAKABAYASHI ET AL.

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on January 10, 2001.
2. ☒ The allowed claim(s) is/are 1-14.
3. ☐ The drawings filed on \_\_\_\_\_ are acceptable as formal drawings.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All b) ☐ Some\* c) ☐ None of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- \* Certified copies not received: \_\_\_\_\_.
5. ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE FOR SUBMITTING NEW FORMAL DRAWINGS, OR A SUBSTITUTE OATH OR DECLARATION. This three-month period for complying with the REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL is extendable under 37 CFR 1.136(a).**

6. ☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.
7. ☒ Applicant MUST submit NEW FORMAL DRAWINGS
  - (a) ☒ including changes required by the Notice of Draftperson's Patent Drawing Review (PTO-948) attached
    - 1) ☒ hereto or 2) ☐ to Paper No. \_\_\_\_\_.
  - (b) ☒ including changes required by the proposed drawing correction filed 10 January 2001, which has been approved by the examiner.
  - (c) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. 12.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

8. ☐ Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Any reply to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE / SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

## Attachment(s)

- |  |   |
|--|---|
| 1 <input type="checkbox"/> Notice of References Cited (PTO-892)  | 2 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)          |
| 3 <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                     | 4 <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____             |
| 5 <input type="checkbox"/> Information Disclosure Statements (PTO-1449), Paper No. _____               | 6 <input checked="" type="checkbox"/> Examiner's Amendment/Comment                  |
| 7 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
|  | 9 <input type="checkbox"/> Other  |

done by D

### EXAMINER'S AMENDMENT

#### *Remark*

1. This Office Action is in response to applicant's amendment filed on January 10, 2001 which has been entered as paper number 10.
2. By this amendment, the applicant has amended 1-12 and 14. Claims 1-14 remain pending in this application.

#### *Examiner's Amendment*

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Justin Oliver (Reg. No. 44,986) on March 16, 2001.

The application has been amended as follows:

In the specification,

On page 24, line 6, change "32" to -22--, line 7, change "33" to -23--,

Lines 15, 19, change "101" to -1--, lines 20, 25, 27, change "103" to -3--, line 21, change "102a" to -2a--, line 24, change "102b" to -2b--, lines 22, 25, 27, change "104" to -4--,

On page 25, lines 2, 15, change "103" to -3--, line 4, change "104" to -4--, line 25, change "101" to -1--.

On page 26, lines 8, 17, 18 and 24, change "103" to -3--and change "104" to -4--, line 25, change "103a" to -3a--, change "104a" to -4a--.

On page 27, line 3, change "103" to -3--, line 10, change "103" to -3a--, line 13 change "104" to -4--, line 17 change "104a" to -4a--.

Art Unit: 2872

On page 28, line 8, change "103a" to -3a--, change "104a" to -4a--, line 16 change "11" to -111--, line 27, change "102" to -2a--,

On page 29, lines 3, 10, 15, 16, 27, change "102a" to -2a--, lines 14 and 26, change "103" to -3--, line 14, change "103a" to -3a--, line 22, change "104" to -4--, line 23, change "102b" to -2b--, change "12" to -13--, line 27 change "102b" to -2b--.

On page 30, line 2, change "102a" to -2a--, change "102b" to -2b--, lines 7, 18, 19, change "103" to -3--, change "104" to -4--, lines 11, 22, change "103a" to -3a--, change "104a" to -4a--, lines 16 and 25, change "101" to -1--, line 27, change "131" to -31--,

On page 31, line 3, change "103" to -3--, change "104" to -4--, line 4, change "101" to -1--, lines 6 and 12, change "133" to -33--, lines 7, 15, 23, 26, change "132" to -32--, line 9, change "131" to -31--, lines 14 and 27, change "134" to -34--, line 24, change "102" to -2a--, change "132a" to -32a--, line 26, change "102" to -2a--,

On page 32, lines 1, 10, 12, 16, 18 change "133" to -33--, lines 3, 5, 9, 12, 18 change "132" to -32--, lines 3, 6, change "134a" to -34a--, line 5, change "132a" to -32a--, lines 7, 10, 15, 20, change "134" to -34--, line 14, change "102" to -2a--,

On page 33, lines 6 and 9, change "131" to -31--,

4. The following changes to the drawings have been approved by the examiner and agreed upon by applicant:

In Figure 14, change "11" to -111--,

In Figure 15, change "12" to -112--, change "11" to -111--,

In Figure 16, change "21" to -121--,

Art Unit: 2872

In Figure 17, change "21" to -121--, change "22" to -122--, change "22a" to -122a--.

In order to avoid abandonment of the application, applicant must make these above agreed upon drawing changes.

*Reasons For Allowance*

5. The following is an examiner's statement of reasons for allowance: Of the prior art references considered, none has disclosed a diffractive optical element having a diffraction grating portion which includes a first and a second diffraction grating wherein the first diffraction grating and an alignment pattern are integrally formed on a first substrate and the second diffraction grating and an alignment pattern are integrally formed on a second substrate. The first and the second substrates are accumulated with a space defined between and the first and the second diffraction gratings are positioned so that the alignment pattern on the first substrate engaged with the alignment pattern on the second substrate. The two diffraction gratings are formed on different materials. In a different embodiment, the instant application also teaches a method to manufacture the diffractive optical element including the step of forming a mold having both an alignment pattern and the second diffraction grating. These arrangements have the advantage of providing a way for more accurately aligning diffraction gratings in a diffractive optical element.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

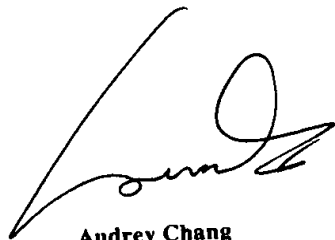
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 703-305-6208. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

Art Unit: 2872

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on 703-308-1637. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

A. Chang  
March 16, 2001

A handwritten signature in black ink, appearing to read 'Audrey Chang', is written over a horizontal line.

**Audrey Chang  
Primary Examiner  
Technology Center 2800**